



MATERIAL SAFETY DATA SHEET (MSDS)

According European Directive 2001/58/CE

Issue Date:11/01/2018

Rev: 2019-011G

1. Product & Company Identification

Product Description:	Li-Ion Polymer Battery	A&S Power Technology Co., LTD.	
Battery Type	18650 3.7V 2600mAh		
Emergency Contact	+86-755-28169348		
E-mail	sales@aspowrbattery.cn		
Address:	Rm. 1312 A Block, Weidonglong Business Building, No. 2 Qinglong Rd., Longhua, Shenzhen, China.		
Telephone:	+86-755-2816 9348	FAX:	+86-755-8415 7385

2. Composition /Information on Ingredients:

Important note: The battery should not be opened or burned. Exposure to the ingredients contained within or their

Chemical Composition	Molecular Formula	CAS NO.	Weight (%)
Lithium Cobalt Dioxide	LiCoO ₂	12190-79-3	42.12
Super-p	C	9003-55-8	1.19
CMC	C ₈ H ₁₁ O ₇ Na	9000/11/7	0.33
SBR	C ₁₂ H ₁₄	-	1.14
Aluminum	Al	7429-90-5	4.73
PVDF	(CH ₂ CF ₂) _n	24937-79-9	1.11
Graphite	C	7782-42-5	20.80
Copper	Cu	7440-50-8	11.23
Electrolyte	LiPF ₆	21324-40-3	17.35
Lead	Pb	7439-92-1	Not Detected
Cadmium	Cd	7440-43-9	Not Detected
Mercury	Hg	7439-97-6	Not Detected

3. Hazardous Identification:

Chemical Nature: White color solid

CAS-No/EINECS NO.:N/A

INCI CTFa-Description: Lithium ion polymer rechargeable battery series

Ingestion: No effect under routine handling and use.

Inhalation: No effect under routine handling and use.

Skin contact: No effect under routine handling and use.

Eye contact: No effect under routine handling and use.

Skin absorption: No effect under routine handling and use.

Reported as carcinogen: Not applicable

4. First Aid Measures

Under normal conditions of use, the battery is hermetically sealed.

Ingestion: Swallowing a battery can be harmful. Contents of an open battery can cause serious chemical burns of mouth, esophagus, and gastrointestinal tract. If battery or open battery is ingested, do not induce vomiting or give food



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or drink. Seek medical attention immediately.

Inhalation: Contents of an open battery can cause respiratory irritation. Inhalation of vapors may cause irritation of the upper respiratory tract and lungs. Provide fresh air and seek medical attention.

Skin Absorption: Ethylene carbonate, diethyl carbonate and dimethyl carbonate may be absorbed through the skin causing localized inflammation.

Skin Contact: Contents of an open battery can cause skin irritation and/or chemical burns. Remove contaminated clothing and wash skin with soap and water. If a chemical burn occurs or if irritation persists, seek medical attention.

Eye Contact: Contents of an open battery can cause severe irritation and chemical burns. Immediately flush eyes thoroughly with water for at least 15 minutes, lifting upper and lower lids, until no evidence of the chemical remains.

Note: Acetylene black and cobalt compounds are listed as possible carcinogens by the International Agency for Research on Cancer (IARC).

5. Fire Fighting Measures

If fire or explosion occurs when batteries are on charge, shut off power to charger.

In case of fire where lithium ion batteries are present, flood the area with water. If any batteries are burning, water

6. Accidental Release Measures

On hand: Place material into suitable containers and call local fire/police department.

In water: If possible. Remove from water and call local fire/police department.

7. Handling & Storage

Handling: Do not expose the battery to excessive physical shock or vibration. Short-circuiting should be avoided; however, accidental short-circuiting for a few seconds will not seriously affect the battery. Prolonged short circuits will cause the battery to rapidly lose energy, could generate enough heat to burn skin. Sources of short circuits include jumbled batteries in bulk containers, coins, metal jewelry, metal covered tables, or metal belts used for assembly of batteries in devices. To minimize risk of short-circuiting,

protective case supplied with the battery should be used to cover the terminals when transporting or storing the

Storage: The lithium ion battery should be between 25% and 75% of full charge when stored for a long period of

8. Exposure Control/Personal Protection

Engineering Control: Keep away from heat and open flame. Stored in a cool dry place.

Personal Protection:

Respiratory Protection: Not necessary under normal conditions.

Eye/Face Protection: Not necessary under normal conditions. Wear safety glasses with side shields if handling an

Gloves: Not necessary under normal conditions. Use neoprene or natural rubber gloves if handling an open or leaking

9. Physical/Chemical Properties

Physical state	Solid	Solubility in water:	Not Applicable
Color	White	Vapor pressure	Not Applicable
Odor	NO	Explosion limit	Not Applicable
Flash point	Not Applicable	Auto flammability	Not Applicable



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Solubility in ethanol soluble	Not Applicable	Melting Point	Not Applicable
Boiling Point	Not Applicable	Freezing Point	Not Applicable

10. Stability & React

Stability: Good stability at standard temperature.

Reactivity: None

Avoid contact with water and acids. Hazardous decomposition products: If Al package foil of battery is damaged, the

11. Toxicological information

This product does not elicit toxicological properties during routine handling and use.

12. Ecological information

If the battery is scrapped, it should be selected and disposed by professional company.

13. Disposal considerations

Do not dispose of battery into environment or sewerage. It should be recycled and disposed basing on your local

14. Transport Information

Lithium Ion Battery

Air Shipment

(A) For Lithium Ion Cells and Batteries (Packing Instruction 965)

Separate lithium ion batteries when shipping to prevent short-circuit. They should be packed in strong packaging for support during transport.

The products meet all the requirements of the IATA DGR 60th edition, under special provisions A99 including UN 38.3 test and 1.2 m drop test. They can be shipped as "Not Restricted" cargo in accordance with IATA Dangerous Goods Regulations Packing Instruction 965 Section II item UN3480.

If the shipping quantity exceeds the quantity limit of Section II, they can be shipped according to IATA Dangerous Goods Regulations Packing Instruction 965 Section IB item UN3480.

(B) For Lithium Ion Cells and Batteries Packed with Equipment (Packing Instruction 966)

The products meet all the requirements of the IATA DGR 60th edition, under special provisions A164 including UN 38.3 test and 1.2 m drop test. They can be shipped as "Not Restricted" cargo in accordance with IATA Dangerous Goods Regulations Packing Instruction 966 Section II item UN3481. If the quantities of lithium ion cells or batteries exceed the allowance permitted in Section II of Packing Instruction 965, the goods can be shipped according to IATA Dangerous Goods Regulations Packing Instruction 966 Section 1B item UN3481

(C) For Lithium Ion Cells and Batteries Contained in Equipment (Packing Instruction 967)

The products meet all the requirements of the IATA DGR 60th edition, under special provisions A164 including UN 38.3 test and 1.2 m drop test. They can be shipped as "Not Restricted" cargo in accordance with IATA Dangerous Goods Regulations Packing Instruction 967 Section II item UN3481.

Sea Shipment



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Sea Shipment

The good is not restricted to IMDG CODE according to the Special Provision

188 of IMDG CODE 2014. Packaging complies with the Special Provision 188 of IMDG CODE 2014

15. Regulatory Information

See ACGIH exposure limits information as noted in Section3.

US: This MSDS meets/exceeds OSHA requirements.

International: This MSDS conforms to European Union (UN), the International Standards Organization (ISO) and the International Labor Organization (ILO) and as documental in ANSI (American National Standards Institute) Standard Z400.1-1993.

Regulations specifically applicable to the product:

IATA-DGR (air transportation)

IMO-IMDG Code (sea transportation)

US Department of Transportation 49 Code of Federal Regulations [USA]

Wastes Disposal and Public Cleaning Law [Japan]

Law for Promotion of Effective Utilization of resources [Japan]

16. Charging and labeling

Charging: This battery is made to be charged many times. Use an A&S Power Battery approved battery charger.

Charging Voltages and Currents: Charging voltages are prevented from exceeding the specified limits by an internal

Labeling: If the A&S Power label or package warnings are not visible, it is important to provide a package and/or

WARNING: CHARGE ONLY WITH SPECIFIED CHARGERS ACCORDING TO DEVICE

Disposal: Dispose in accordance with all applicable federal, state and local regulations.

17.UN Classes:

All Li Polymer batteries with the necessary testing requirements under the UN38.3 Manual of Tests and Criteria as

18. Other information

The information contained herein is furnished without warranty of any kind. Users should consider this data only as a

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